Ad Hoc Alliance for Public Access to 911

Alliance for Technology Access•Arizona Consumers League•National Consumers League•World Institute on Disability•National Emergency Number Association-California Chapter•Crime Victims United•Justice for Murder Victims•California Cellular Phone Owners Association•Florida Consumer Fraud Watch•Center for Public Interest Law•Consumer Action•Consumer Coalition of California•Consumers First•California Alliance for Consumer Protection•Californians Against Regulatory Excess•The Office of Communication of the United Church of Christ•Utility Consumer Action Network•Children's Advocacy Institute

February 3, 1998

Magalie R. Salas
Secretary
Federal Communications Commission
1919 M Street, NW
Washington, DC 20554-0001

re: *Ex Parte* Conversation
CC Docket 94-102, Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems

Dear Ms. Salas:

On January 29, 1998 Carl Hilliard and I, representing the Ad Hoc Alliance, met with Dan Phythyon and other members of the FCC's Wireless Bureau regarding the above referenced docket. The meeting was also attended by representatives from CTIA, PCIA and the public safety community.

I have attached a summary of the discussion points used by the Alliance during the meeting. Also during the meeting, the Alliance distributed the enclosed map depicting area coverage by cellular systems and the report from Trott Communications regarding the Alliance's proposed strongest signal solution.

Sincerely,

Jonathan D. Linkous
Washington Representative

enclosures

cc: The Honorable William Kennard
The Honorable Susan Ness
The Honorable Michael Powell
The Honorable Harold Furchgott-Roth
The Honorable Gloria Tristani
Dan Phythyon, FCC Wireless Bureau

ALLIANCE FOR PUBLIC ACCESS TO 911

SUMMARY OF *EX PARTE* PRESENTATION BY THE ALLIANCE FOR PUBLIC ACCESS TO 911 ("ALLIANCE") ON JANUARY 29, 1998 BEFORE THE WIRELESS BUREAU

At the request of the Commission's wireless bureau, a meeting took place on January 29, 1998, between representatives of CTIA, PCIA, NENA, APCO, the Alliance and representatives of the Commission's staff to discuss the progress of discussions between the wireless industry, public safety representatives and the Alliance concerning the proposal by the Alliance that cellular phones be required to automatically select the strongest available compatible channel of communication when 911 is dialed. The following is a summary of the presentation by the Alliance:

Description of the Problem. The Alliance presented a map, just published in a magazine called "Global Wireless," to illustrate the problem of providing reliable 911 service to 600 milliwatt portable cellular phones operating in cellular systems which are designed to serve 3 watt vehicle mounted mobile cell phones. A copy of this map is attached. This map is an artist's depiction comparing the coverage afforded to hand held portable cellular phones in comparison to mobile cellular phones.

When a cellular phone is turned on, it automatically scans the channels available from both of the two competing cellular systems. These systems are called the "A system" and the "B system". Most cellular phones are restricted by the cellular carrier to select and use only those channels available from its system. Restricted cell phones are called "A only" or "B only". Cellular phones can also be programmed to "prefer" one system, and such phones are called "A preferred" or "B preferred". A preferred cell phone will switch to the other system if *there is no signal from the preferred system.* The attached map shows the areas where there no signal colored in green. A major problem occurs when a hand held portable cell phone is located in one of the yellow areas shown on the map. In the yellow zone, the signal from the cell system is strong enough to prevent the portable cell phone from switching to the other carrier but the power of that hand held unit is not sufficient to establish and hold a channel for voice communications. In simplified terms, the portable unit located in the yellow zone "hears" the signal from the cell system and, when a call is attempted, that hand held cell phone sends a *data* signal to the cell system requesting assignment of a voice channel. That data signal is repeated five times and error correction calculations are performed at the cell site, so even the weak signal is received and understood. The cell site then assigns a voice channel to the portable unit but all the user hears is "dead air". As long as the portable unit "hears" the preferred cell system, it will not switch even though voice communications are not possible.

Description of the Alliance proposal. The attached map shows the coverage from one cellular system, however, as mentioned above, there are two cell systems in every area of the country (A & B). The Alliance tests show that if you overlay the actual coverage areas of both the A & B cell systems, the total coverage is dramatically improved. For this reason, *over two years ago*, the

Alliance filed a petition with the Commission requesting a rule change which would require cell phones to select the strongest available channel of communication when ever a call to 911 is dialed. This involves a trivial software change that simply repeats the original scan procedure in the handset. There are two instances that the Alliance is aware of in California where the adoption of this rule change would have made a difference. In November of 1994, Marcia Spielholtz was chased for approximately ten minutes by car jackers before she was cornered and shot in the face. She repeatedly dialed 911 and heard nothing but dead air during this chase. The Alliance tests show that she was then in the yellow zone of her carrier's system. These same tests show that the signal from the competing carrier was in the "red" zone, i.e. strong enough for the call to have been completed. On November 28, 1997, the Lechuga family car hit a patch of ice on the Angeles Crest highway and went over the edge of the road. Five calls for help were placed from the Lechuga cell phone. The data request for a voice channel was received by the cell carrier but none of these calls were completed. The Alliance test show that the Lechuga's were located in a yellow zone of their carrier's system. The same tests show that the signal from the other carrier was strong enough to complete these emergency calls. While the autopsy reports have not yet been released, it appears that the two small Lechuga children froze to death and Ms. Lechuga either froze to death or was killed by wild animals.

Wireless Industry proposals. The wireless industry proposes that CTIA and PCIA undertake a campaign to advise the public how to switch their cellular phones from the "only" mode to the "preferred" mode. This change would only have an effect when the portable cellular phone was located in the "green" zone shown on the attached map and would not have helped Marcia Spielholtz or the Lechugas. The wireless industry also suggests that the Alliance proposal be submitted to the wireless industry standards setting body and admits that this process could take a year or more.

Technical issues. On June 12, 1996, the Commission concluded that the Alliance had made a prima facie case for its proposal and said "[i]f a commenter believes that Alliance's [strongest signal] proposal is technically infeasible, it should provide its reasons in detail, with supporting engineering analysis". No such reasons or analysis were filed. The question of technical issues was again raised in a meeting between the parties in Baltimore on November 6-7, 1997. It was agreed that any such questions would be put in written form and supported by engineering statements and then discussed in a technical workshop on January 5, 1998. No such submissions were made. Nevertheless, the Alliance requested an independent engineering company, the Trott Group, to evaluate the Alliance's proposal in the light of the "concerns" expressed by certain members of the wireless industry. The Trott Group concluded that there were no technical issues. A copy of the Trott report was distributed at the time of the meeting, and a copy is attached hereto.

Conclusion. There has been some progress. The Alliance has narrowed its proposal to 553 compatible cellular phones and agrees that the consumer should have the option to shut off the automatic selection of the strongest channel when 911 is dialed. There is no agreement however over the question of whether or not the public should have the right of automatic access to the strongest available channel of communication whenever 911 is dialed.

TROTT
COMMUNICATIONS GROUP

Report

Prepared for

AD HOC ALLIANCE FOR PUBLIC ACCESS TO 911

Prepared by

Trott Communications Group, Inc.
January 27, 1998

Background:

The Ad Hoc Alliance for Public Access to 911 (*Alliance*) proposed that the FCC adopt a rule change requiring newly manufactured cell phones to automatically select the strongest compatible forward control channel whenever a 9-1-1 call was dialed. On July 26, 1996, the FCC released a Further Notice of Proposed Rulemaking in CC Docket No. 94-102. In that Notice, the FCC said " If a commenter believes that Alliance's proposal [to select the strongest signal] is technically infeasable, it should provide its reasons in detail, with supporting engineering analysis."

The *Alliance* retained Trott Communications Group, Inc. (*Trott*) to evaluate this proposal and prepare a report for submission to the FCC. The *Trott* report of August 27, 1996 concluded that the *Alliance*'s proposal could be achieved with minimal impact on the equipment manufacturer and would minimize the probability of dropped or uncompleted 9-1-1 calls. It is *Trott*'s understanding that no other reports were filed with the FCC within the comment period.

During approximately the same time period, the *Alliance* had engineers perform radio frequency signal measurement tests in different cities across the country. These tests documented the existence of areas within each of these cities where the best signal from one of the cellular carriers was not sufficient to maintain a reliable path of communications from a hand held cell phone. The studies also demonstrated that the signal provided by the competing cellular carrier in these same locations was usually a much stronger signal.

Trott's review and analysis of those studies and the collected data indicates that both of the competing carriers each had locations where they were the weak signal

provider vs. the competitor's signal. However, the *Alliance* studies did not locate any areas within the cities tested where either carrier had a complete lack of measurable signal, only areas where it would be difficult to maintain a reliable path of communications.

Trott was informed by the *Alliance* that after the filings (August, 1996), a number of ex parte presentations were made to the FCC which challenged the *Alliance* proposal but that a review of the ex parte filings, by the *Alliance*, failed to reveal any engineering analysis in support of these challenges.

Recent Activities:

The *Alliance* has indicated to *Trott* that it was asked to reopen its proposal in a joint meeting between certain wireless industry and public safety representatives during WEIAD II in Baltimore. At that meeting, questions were voiced concerning the call set up time; the effect on the cellular systems when the signal strength from both carriers was nearly equal and instances when the strongest forward control channel does not result in obtaining the best voice channel. *Trott* understands that it was agreed that the *Alliance* would consider these questions if they were placed in writing and supported by appropriate engineering analysis. The *Alliance* then made arrangements for *Trott* to evaluate any such materials and for *Trott* to attend the January, 1998, workshop prior to the WEIAD III meeting in Phoenix to discuss any objections further.

At the end of December, 1997, *Alliance* advised *Trott* that no written issues, questions nor any supporting engineering data were received by the *Alliance* for review. Therefore, the *Alliance* concluded that there were no valid technical reasons why the *Alliance*'s proposal should not be adopted by the FCC and no reason for *Trott* to attend the workshops or the WEIAD III meeting.

Current Situation:

Alliance advised *Trott* that, at the workshop meeting prior to the WEIAD III meeting in Phoenix on January 5, 1998, certain members of the wireless industry proposed that all "purely analog" cell phones be programmed to use A over B or B over A system select logic as an alternative to the *Alliance*'s proposal. The *Alliance* believes that this change is a small improvement for cellular customers but it is not an alternative to the *Alliance*'s strongest signal proposal. Also at this meeting, the *Alliance* received a recommendation that the *Alliance* submit its proposal to a standards setting body for review. The *Alliance* was told that as part of a standards process, they (the *Alliance)* should expect to be required to develop a prototype unit

which must be tested in 100 different locations. The *Alliance* membership questions whether or not the *Alliance*'s proposal involves standards setting in the first place. The proposed rule change requested by the *Alliance* directs the handset manufacturers to enable their product to select the strongest compatible forward control channel when a 9-1-1 call is dialed using whatever means is most appropriate.

As a result of the workshop meetings of January 5, 1998, the *Alliance* has asked *Trott* to produce this report to provide advice, comments and recommendations on the following list of "issues":

1. A/B or B/A system select criteria
2. Call set up time
3. Control channel signal strength as predictor of voice channel quality
4. Impact on cellular system
5. Customer choice
6. Unintended consequences
7. Standards setting

The following are our comments and suggestions concerning the above enumerated items:

1. A/B or B/A System Select Criteria

   Programming cell phones for A/B or B/A instead of A Only or B Only is indeed a small step in the right direction, but it should be applied to all phones that the carrier sells, not just "purely analog" handsets. As the *Alliance* engineers pointed out, this mode of operation will allow calls to be completed when the preferred system is **not providing any signal** at a given location. The *Alliance*'s signal strength tests demonstrated that the total absence of the preferred signal was not the issue in the metropolitan areas tested . The presence of a weak and inadequate "preferred" signal still prevents the handset from switching to the non-preferred system. This "solution" cannot provide the cell phone user with the call completion and retention success that the *Alliance*'s "strongest compatible signal" proposal will provide.

2. Call Set Up Time

   The "issue" that the *Alliance*'s proposal will result in extending the call set up time to an excessive amount is without substance. A "Rescan" of both the preferred and non-preferred system at the origination of the 9-1-1 call will extend call set up time by no more than ½ second based upon today's

handset technology. We believe that this interval is not a significant reason to deter implementing the *Alliance*'s proposal.

3. Control Channel Signal Strength as Predictor of Voice Channel Quality

The "issue" of the strongest forward control channel signal strength not resulting in the best voice channel was addressed by *Trott* in our initial report dated August 27, 1996 and re-addressed in our October 18, 1996 response to comments. We reiterate that the design of cellular systems mandates that control channel signal strength will be less than or equal to the associated voice channel signal strength from that cell site.

The possibility does exist, however, that the cell site with the strongest control channel signal will not have a voice channel available to handle the call and the call will be "Redirected" to a nearby cell site for completion. This process of "redirection" is normal for congested cell sites. The result of this process may cause a call to begin at the "Redirected" cell site if sufficient signal strength is available, but it will normally be handed back to the closer cell as channels become available. As stated, this is the normal process today without regard to the *Alliance* proposal. All callers who prefer the system with the strongest control channel signal will experience this treatment today. Implementing the *Alliance* proposal will affect only conforming handsets that prefer the weaker control channel but have switched to the non-preferred stronger control channel. Quantifying this event is almost impossible with the number of variables involved. We do not believe that there is substance to this "issue".

4. Impact on the Cellular System

What impact the *Alliance*'s proposal will have on the cellular system loading depends on a number of variables:

a) The signal strength provided to a given location by each of the systems

b) The number of cell phones operating in close proximity within this given location

c) The distribution of system preference among these operating cell phones

d) The number of simultaneous 9-1-1 calls originated by this group of cell phones

e) The number of handsets among this group of operating cell phones complying to the *Alliance*'s proposal of seeking out the strongest compatible signal when 9-1-1 is dialed

f) The mobility of this group of 9-1-1 callers (i.e. Stationary, Walking or Driving through the location).

We believe that in the core areas there will be no impact as calls will be evenly distributed between the systems. In the suburban and rural areas there will be more traffic directed to the stronger signal provider but as the *Alliance*'s tests demonstrated, this still results in fairly even total call distribution between the carriers as each basically fills in the others weak signal spots. Again, we don't believe this "issue" has sufficient substance to deter implementing the *Alliance* proposal.

5. Customer Choice

As far as customer choice is concerned, we believe that an "air-bag" switch is appropriate. Allowing the customer to choose whether the handset will utilize the *Alliance* proposed 9-1-1 call process can be easily implemented by the manufacturer.

6. Unintended Consequences

Prudence is a desirable quality. However the search for unintended consequences suggests that the *Alliance* proposal involves new process for the cell phone. This is not the case. The cell phone today already scans the full list of forward control channels (both A and B system) during its power-on sequence and whenever signal is lost from the preferred system. The *Alliance* proposal simply triggers this process to occur when the user dials 9-1-1. As we stated in our initial report, the complexity of this change is minimal and the cost to the manufacturer to implement it should be equally minimal. We believe that all predictable consequences of the *Alliance* proposal have been voiced by the wireless industry and none have created a reason to deter its implementation.

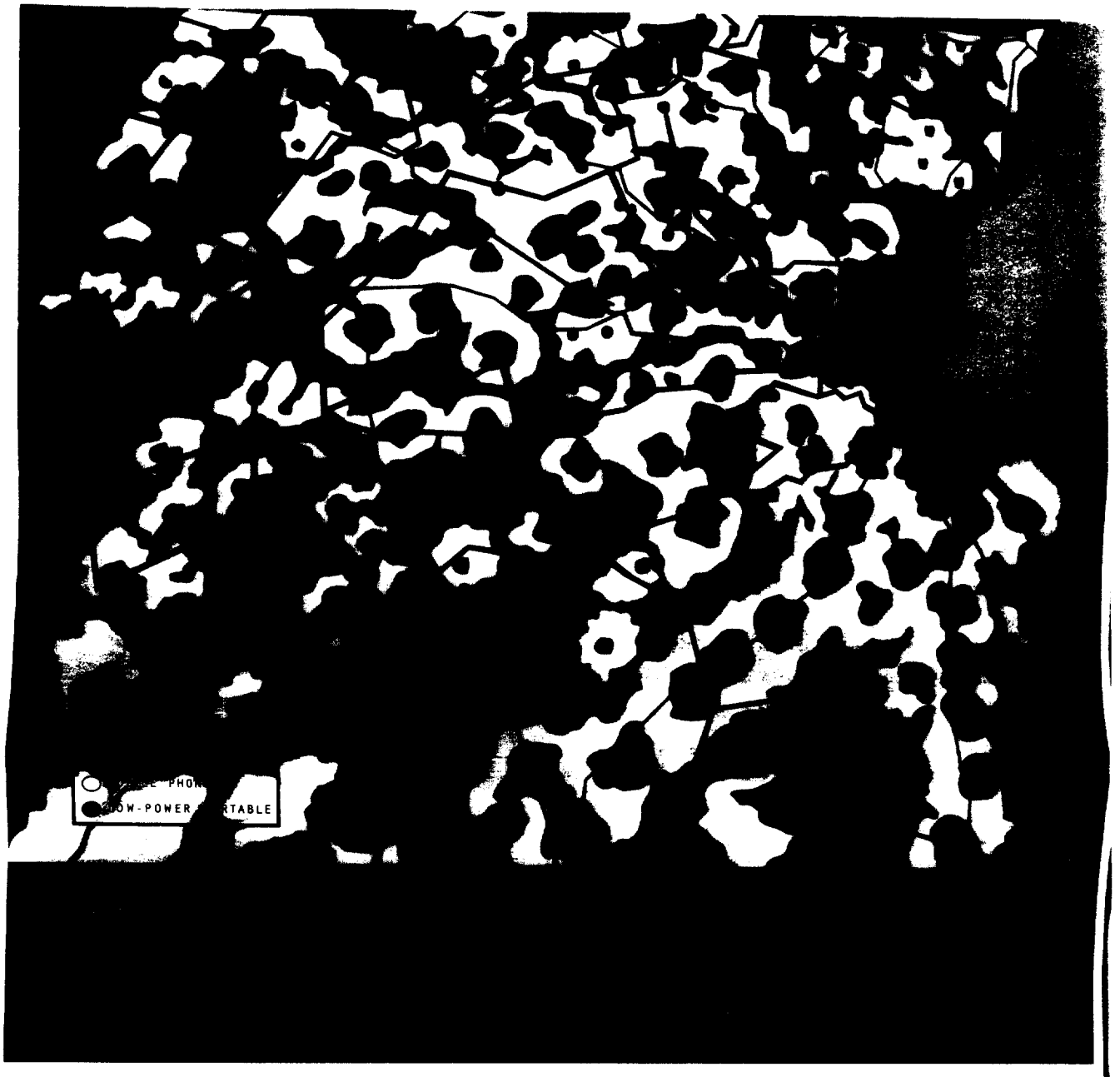
7. Standards Setting

The *Alliance* has identified an objective which is in the public interest and the

Alliance has demonstrated that this objective can be realized without imposing undue burdens on the wireless industry. As stated, the handset already performs the scan of both systems. No new standard is needed for this action. We also think it inappropriate for a consumer group to gain access to manufacturer's software, develop modifications to that software, build a prototype and pursue the setting of standards. The manufacturers are best equipped to determine how they will implement the *Alliance* proposal into their handsets as each manufacturer's software is unique.

Conclusion:

There have been no technical issues raised surrounding the *Alliance*'s "strongest signal" proposal that justify further delay. Further discussions and continuing the "what if's" are unlikely to result in anything productive. The goal is to take advantage of the fact that where the "A" carrier has a coverage hole, the "B" carrier usually fills the hole, and likewise, where the "B" carrier has a coverage hole, the "A" carrier usually fills the hole. Taking advantage of this fact is no longer a technical issue, it is a policy issue for the FCC to decide.



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